

# Futurelight®

**BEDIENUNGSANLEITUNG**

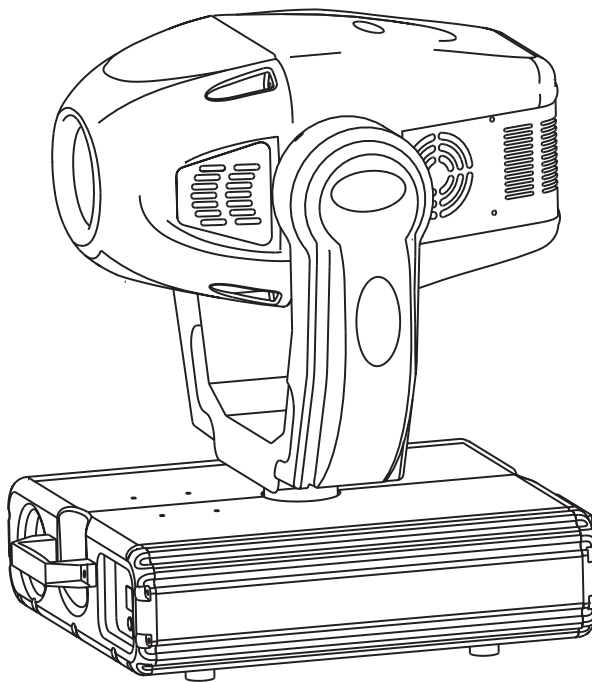
**USER MANUAL**

**MODE D'EMPLOI**

**MANUAL DEL USUARIO**

## **PHS-700**

## **Pro-Head-Spot**



Für weiteren Gebrauch aufbewahren!  
Keep this manual for future needs!  
Gardez ce mode d'emploi pour des  
utilisations ultérieures!  
Guarde este manual para posteriores usos.



© Copyright  
Nachdruck verboten!  
Reproduction prohibited!  
Réproduction interdit!  
Prohibida toda reproducción.

# MULTI-LANGUAGE-INSTRUCTIONS

## Inhaltsverzeichnis

## Table of contents

## Sommaire

## Contenido

### Deutsch

<b>EINFÜHRUNG.....</b>	<b>4</b>
<b>SICHERHEITSHINWEISE.....</b>	<b>4</b>
<b>BESTIMMUNGSGEMÄßE VERWENDUNG.....</b>	<b>5</b>
<b>GERÄTEBESCHREIBUNG.....</b>	<b>6</b>
Features.....	6
Geräteübersicht.....	7
<b>INSTALLATION.....</b>	<b>8</b>
Lampeninstallation/Lampenwechsel.....	8
Lampenjustierung.....	9
Einsetzen/Austauschen von Gobos.....	9
Projektormontage.....	10
Anschluss an den DMX-512 Controller / Verbindung Projektor - Projektor.....	13
Anschluss ans Netz.....	13
<b>BEDIENUNG.....</b>	<b>14</b>
Stand Alone-Betrieb.....	14
DMX-gesteuerter Betrieb.....	14
Adressierung des Projektors.....	14
DMX-Protokoll.....	15
Control Board.....	19
Hauptfunktionen.....	20
Fehlermeldungen.....	26
<b>REINIGUNG UND WARTUNG.....</b>	<b>27</b>
Sicherungswechsel.....	28
<b>TECHNISCHE DATEN.....</b>	<b>28</b>

### English

<b>INTRODUCTION.....</b>	<b>29</b>
<b>SAFETY INSTRUCTIONS.....</b>	<b>29</b>
<b>OPERATING DETERMINATIONS.....</b>	<b>30</b>
<b>DESCRIPTION OF THE DEVICE.....</b>	<b>31</b>
Features.....	31
Overview.....	32
<b>INSTALLATION.....</b>	<b>33</b>
Lamp adjustment.....	34
Inserting/Exchanging gobos.....	34
Rigging.....	35
DMX-512 connection / connection between fixtures.....	37
Connection with the mains.....	38
<b>OPERATION.....</b>	<b>38</b>
Stand Alone operation.....	38
DMX-controlled operation.....	38
Addressing.....	38
DMX-protocol.....	39
Control Board.....	43
Main functions.....	44
Error Messages.....	50
<b>CLEANING AND MAINTENANCE.....</b>	<b>51</b>
Replacing the fuse.....	51
<b>TECHNICAL SPECIFICATIONS.....</b>	<b>52</b>

<b>INTRODUCTION</b>	<b>53</b>
<b>INSTRUCTIONS DE SÉCURITÉ</b>	<b>53</b>
<b>EMPLOI SELON LES PRESCRIPTIONS</b>	<b>54</b>
<b>DESCRIPTION DE L'APPAREIL</b>	<b>55</b>
Features	55
Aperçue des parties	56
<b>INSTALLATION</b>	<b>57</b>
Ajustage de la lampe	58
Introduire/échanger gobos	58
Montage du projecteur	59
Connexions au contrôleur DMX-512 / raccord projecteur - projecteur	62
Alimentation	62
<b>MANIEMENT</b>	<b>63</b>
Opération Stand Alone	63
Contrôle par DMX	63
Codage du projecteur	63
Protocôle DMX	64
Control Board	68
Fonctions principales	69
Avis d'erreur et d'information	75
<b>NETTOYAGE ET MAINTENANCE</b>	<b>76</b>
Remplacer le fusible	76
<b>CARACTÉRISTIQUES TECHNIQUES</b>	<b>77</b>

<b>INTRODUCCIÓN</b>	<b>78</b>
<b>INSTRUCCIONES DE SEGURIDAD</b>	<b>78</b>
<b>INSTRUCCIONES DE MANEJO</b>	<b>79</b>
<b>DESCRIPCIÓN DEL APARATO</b>	<b>80</b>
Features	80
Descripción de las partes	81
<b>INSTALACIÓN</b>	<b>82</b>
Instalar/Reemplazar la lámpara	82
Ajuste de la lámpara	83
Insertar/reemplazar gobos	83
Montaje del proyector	84
Conexión al controlador DMX / conexión proyector - proyector	87
Alimentación	87
<b>OPERACIÓN</b>	<b>88</b>
Operación Stand Alone	88
Control por DMX	88
Direccionamiento del proyector	88
Protocolo DMX	89
Control Board	93
Fundones principales	94
Avisos de error	100
<b>LIMPIEZA Y MANTENIMIENTO</b>	<b>101</b>
Reemplazar el fusible	101
<b>ESPECIFICACIONES TÉCNICAS</b>	<b>102</b>

**Das neueste Update dieser Bedienungsanleitung finden Sie im Internet unter:**

**You can find the latest update of this user manual in the Internet under:**

**Vous pouvez trouvez la dernière version de ce mode d'emploi dans l'Internet sous:**

**Vd. puede encontrar la versión más reciente de este manual en el Internet bajo:**

[www.futurelight.com](http://www.futurelight.com)

## USER MANUAL

# Futurelight®

## PHS-700 Pro-Head-Spot



### CAUTION!

Keep this device away from rain and moisture!  
Unplug mains lead before opening the housing!

For your own safety, please read this user manual carefully before you initial start-up.

Every person involved with the installation, operation and maintenance of this device has to

- be qualified
- follow the instructions of this manual
- consider this manual to be part of the total product
- keep this manual for the entire service life of the product
- pass this manual on to every further owner or user of the product
- include every supplementay update with the original manual

## INTRODUCTION

Thank you for having chosen a FUTURELIGHT PHS-700. You will see you have acquired a powerful and versatile device.

Unpack your PHS-700.

Before you initial start-up, please make sure that there is no damage caused by transportation. Should there be any, consult your dealer and do not use the device.

## SAFETY INSTRUCTIONS



### CAUTION!

Be careful with your operations. With a dangerous voltage you can suffer a dangerous electric shock when touching the wires!

This device has left our premises in absolutely perfect condition. In order to maintain this condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this user manual.



### Important:

*Damages caused by the disregard of this user manual are not subject to warranty. The dealer will not accept liability for any resulting defects or problems.*

If the device has been exposed to drastic temperature fluctuation (e.g. after transportation), do not switch it on immediately. The arising condensation water might damage your device. Leave the device switched off until it has reached room temperature.

This device falls under protection-class I. The power plug must only be plugged into a protection class I outlet.

Never let the power-cord come into contact with other cables! Handle the power-cord and all connections with the mains with particular caution!

Make sure that the available voltage is not higher than stated on the rear panel.

Make sure that the power-cord is never crimped or damaged by sharp edges. Check the device and the power-cord from time to time.

Always disconnect from the mains, when the device is not in use or before cleaning it. Only handle the power-cord by the plug. Never pull out the plug by tugging the power-cord.

During the initial start-up some smoke or smell may arise. This is a normal process and does not necessarily mean that the device is defective.

**Caution:** During the operation, the housing becomes very hot.

**Danger of burning!** Never install the device on a highly flammable surfaces (e.g. fair carpet)!



#### **HEALTH HAZARD!**

**Never look directly into the light source, as sensitive persons may suffer an epileptic shock (especially meant for epileptics)!**

Keep away children and amateurs!

## **OPERATING DETERMINATIONS**

This device is a moving-head spot for creating decorative effects. This product is only allowed to be operated with an alternating current of 230 V, 50 Hz and was designed for indoor use only.

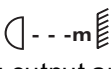
This device is designed for professional use, e.g. on stages, in discotheques, theatres etc.

Lighting effects are not designed for permanent operation. Consistent operation breaks will ensure that the device will serve you for a long time without defects.

Do not shake the device. Avoid brute force when installing or operating the device.

Never lift the fixture by holding it at the projector-head, as the mechanics may be damaged. Always hold the fixture at the transport handles.

When choosing the installation-spot, please make sure that the device is not exposed to extreme heat, moisture or dust. There should not be any cables lying around. Please make sure that the unit cannot be touched or bumped. You endanger your own and the safety of others!

The symbol  determines the minimum distance from lighted objects. The minimum distance between light-output and the illuminated surface must be more than this value.

The device must only be installed on a non-flammable surface. In order to safeguard sufficient ventilation, leave 50 cm of free space around the device. Please note that heat-sensitive objects may be deformed or damaged by the emitted heat.

Make sure that the area below the installation place is blocked when rigging, derigging or servicing the fixture.

For overhead use (mounting height >100 cm), always fix the fixture with an appropriate safety-rope. Fix the safety-rope at the correct fixation points only. The safety-rope must never be fixed at the transport handles!

Only operate the fixture after having checked that the housing is firmly closed and all screws are tightly fastened.

The lamp must never be ignited if the objective-lens or any housing-cover is open, as discharge lamps may explode and emit a high ultraviolet radiation, which may cause burns.

The maximum ambient temperature  $t_a = 45^\circ \text{C}$  must never be exceeded.

Operate the device only after having familiarized with its functions. Do not permit operation by persons not qualified for operating the device. Most damages are the result of unprofessional operation!

Please use the original packaging if the device is to be transported.

Please consider that unauthorized modifications on the device are forbidden due to safety reasons!

Never remove the serial barcode from the device as this would make the guarantee void.

If this device will be operated in any way different to the one described in this manual, the product may suffer damages and the guarantee becomes void. Furthermore, any other operation may lead to dangers like short-circuit, burns, electric shock, lamp explosion, crash etc.

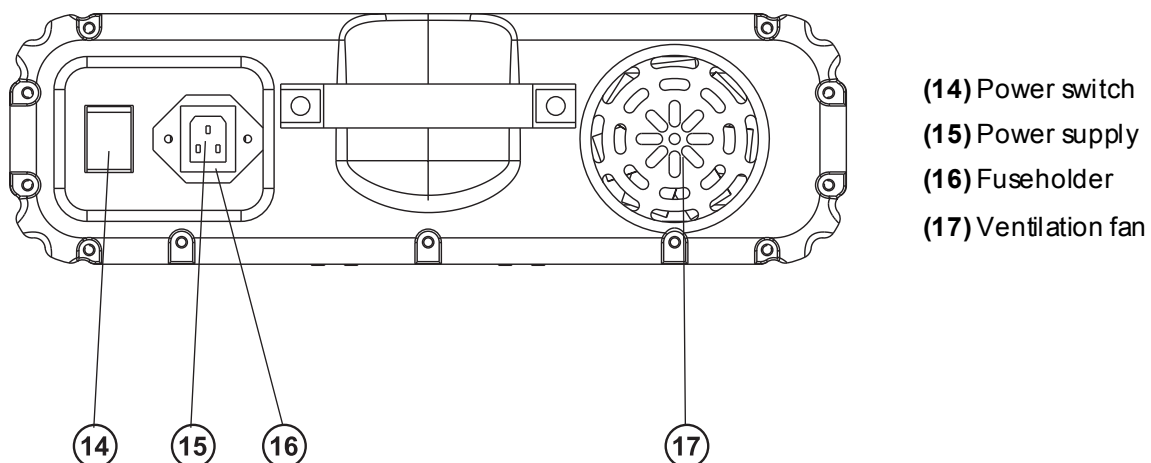
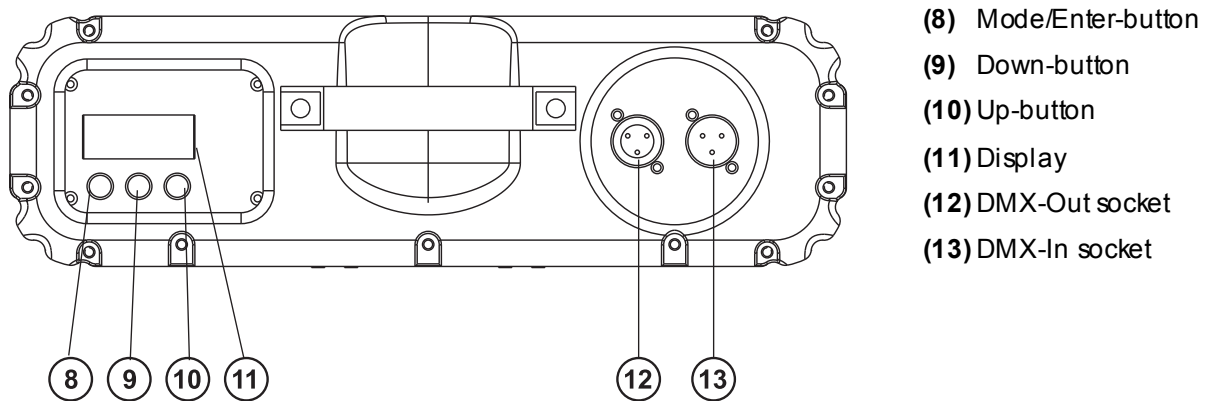
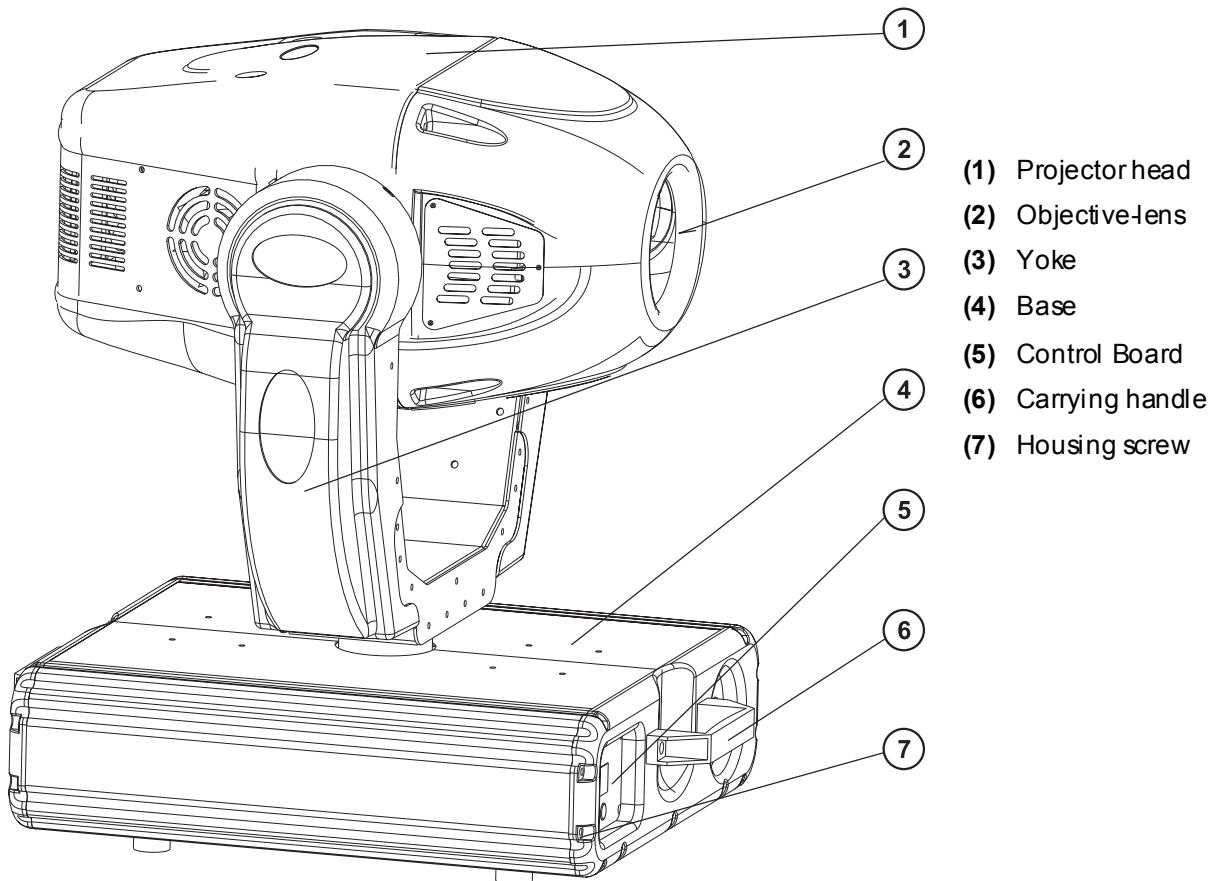
## **DESCRIPTION OF THE DEVICE**

### **Features**

#### **High-Power Moving-head**

DMX-controlled operation or stand alone operation with Master/Slave-function • Sound-controlled via built-in microphone • 48 preprogrammed scenes in Program Run for stand alone operation • Number of scenes in Program Run can be changed individually • The scenes in Program Run can be modified via the Control Board or via an external controller and loaded into the memory • Colour-wheel 1 with 7 different, dichroic colour-filters and white • Colour-wheel 2 with 4 different, dichroic colour-filters and white and additionally with correction-filters 3,200 K and 5,600 K and UV-filter • Switchable colour change (mode 1: only full colours, mode 2: colour-change at every position) • Rainbow-effect with adjustable speed in both directions • 2 gobo-wheels with 6 rotating gobos plus open • All gobos can be interchanged • With gobo-shake function • Macro-function for rotating gobos/rotating prism combinations • Motorized focus • Steplessly adjustable iris • Preprogrammed variable/random iris pulse effects • Strobe-effect with 1-13 flashes per second • Rotating 3-facet prism • Mechanic dimmer • Exact positioning via 16 bit Pan/Tilt movement resolution • Control-Board with 4-digit display and foil-keyboard for adjusting the DMX-starting address, Pan/Tilt-Reverse, Program, Reset, lamp on/off, operating hours • For MSR 700 G-22 lamp • DMX-control via every standard DMX-controller

## Overview



## INSTALLATION



### **DANGER TO LIFE!**

Only install the lamp with the device switched off!  
Unplug from mains before!

For the installation, you need one MSR 700 G-22 lamp.

The lamp must only be changed when wearing appropriate protective clothing (protection glasses, protection gloves, helmet with sight, leather apron).



### **CAUTION!**

The lamp has to be replaced when it is damaged  
or deformed due to the heat!

The lamp life given by the manufacturer must never be exceeded. This is why you need to take notes on the operational time of the lamp and replace the lamp in time.

Keep exchanged lamp in a protective container and remove accordingly.

During the operation, the lamp reaches temperatures of up to 600° C.

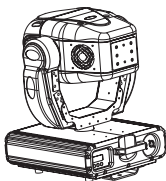
**Before replacing the lamp, unplug mains lead and let the lamp cool down (approx. 10 minutes).**

During the installation do not touch the glass-bulbs bare-handed! Please follow the lamp manufacturer's notes!

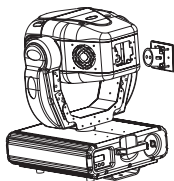
Do not install lamps with a higher wattage! Lamps with a higher wattage generate temperatures the device was not designed for. Damages caused by non-observance are not subject to warranty.

### **Procedure:**

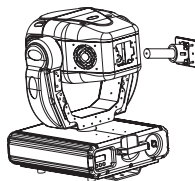
**1**



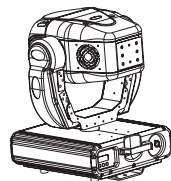
**2**



**3**



**4**



**Step 1:** Unscrew the fixation screws X, Y, Z of the lamp system and carefully remove it from the housing.

**Step 2:** If replacing the lamp, remove the old lamp from the lamp holder.

**Step 3:** Insert the lamp into the lamp holder.

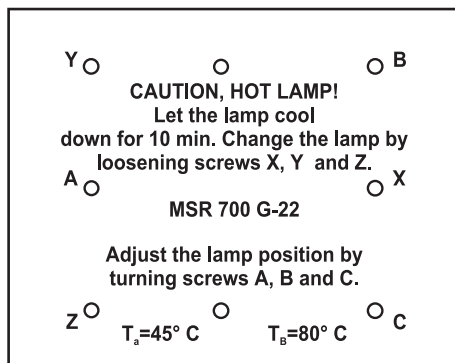
**Step 4:** Replace the lamp system in the housing and tighten the fixation screws.

**Step 5:** Adjust the lamp as described under lamp adjustment.



**Do not operate this device with opened cover!**

## Lamp adjustment



The lampholder is aligned at the factory. Due to differences between lamps, fine adjustment may improve light performance.

Strike the lamp, open the shutter, set the dimmer intensity onto 100 % and direct the light towards a flat surface (wall). Center the hot-spot (the brightest part of the beam) using the 3 adjustment screws "A, B, C". Turn one screw at a time to drag the hot-spot diagonally across the projected image. If you cannot detect a hot-spot, adjust the lamp until the light is even.

To reduce a hot-spot, pull the lamp in by tuning all three screws "A, B, C" clockwise ¼-turn at a time until the light is evenly distributed.

If the light is brighter around the edge than it is in the center, or if light output is low, the lamp is too far back in the reflector. "Push" the lamp out by turning the screws "A, B, C" counterclockwise ¼-turn at a time the light is bright and evenly distributed.

## Inserting/Exchanging gobos



**DANGER!**  
Install the gobos with the device switched off only.  
Unplug from mains before!



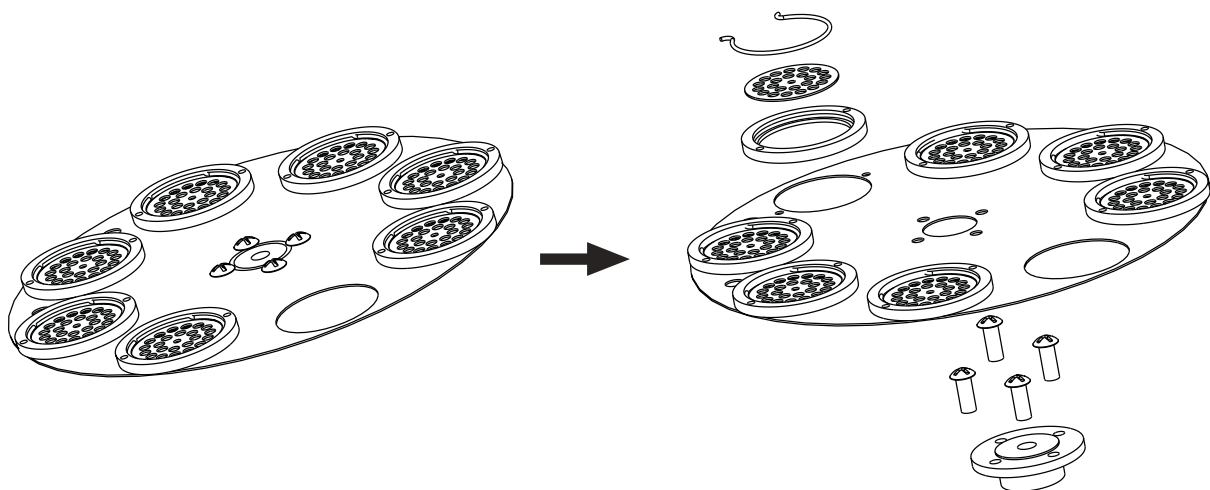
If you wish to use other forms and patterns as the standard-gobos, or if gobos are to be exchanged, please follow the instructions below:



**CAUTION!**  
Never unscrew the screws of the rotating gobo as the ball bearing will otherwise be opened!



Remove the fixation-ring with an appropriate tool. Remove the gobo and insert the new gobo. Press the fixation-ring together and insert it in front of the gobo.



## Rigging



### **DANGER TO LIFE!**

Please consider the EN 60598-2-17 and the respective national norms during the installation! The installation must only be carried out by an authorized dealer!

The installation of the projector has to be built and constructed in a way that it can hold 10 times the weight for 1 hour without any harming deformation.

The installation must always be secured with a secondary safety attachment, e.g. an appropriate catch net. This secondary safety attachment must be constructed in a way that no part of the installation can fall down if the main attachment fails.

When rigging, derigging or servicing the fixture staying in the area below the installation place, on bridges, under high working places and other endangered areas is forbidden.

The operator has to make sure that safety-relating and machine-technical installations are approved by an expert before taking into operation for the first time and after changes before taking into operation another time.

The operator has to make sure that safety-relating and machine-technical installations are approved by an expert after every four year in the course of an acceptance test.

The operator has to make sure that safety-relating and machine-technical installations are approved by a skilled person once a year.

### **Procedure:**

The projector should be installed outside areas where persons may walk by or be seated.

**IMPORTANT! OVERHEAD RIGGING REQUIRES EXTENSIVE EXPERIENCE**, including (but not limited to) calculating working load limits, installation material being used, and periodic safety inspection of all installation material and the projector. If you lack these qualifications, do not attempt the installation yourself, but instead use a professional structural rigger. Improper installation can result in bodily injury and/or damage to property.

The projector has to be installed out of the reach of people.

If the projector shall be lowered from the ceiling or high joists, professional trussing systems have to be used. The projector must never be fixed swinging freely in the room.

**Caution:** Projectors may cause severe injuries when crashing down! If you have doubts concerning the safety of a possible installation, do NOT install the projector!

Before rigging make sure that the installation area can hold a minimum point load of 10 times the projector's weight.



### **DANGER OF FIRE!**

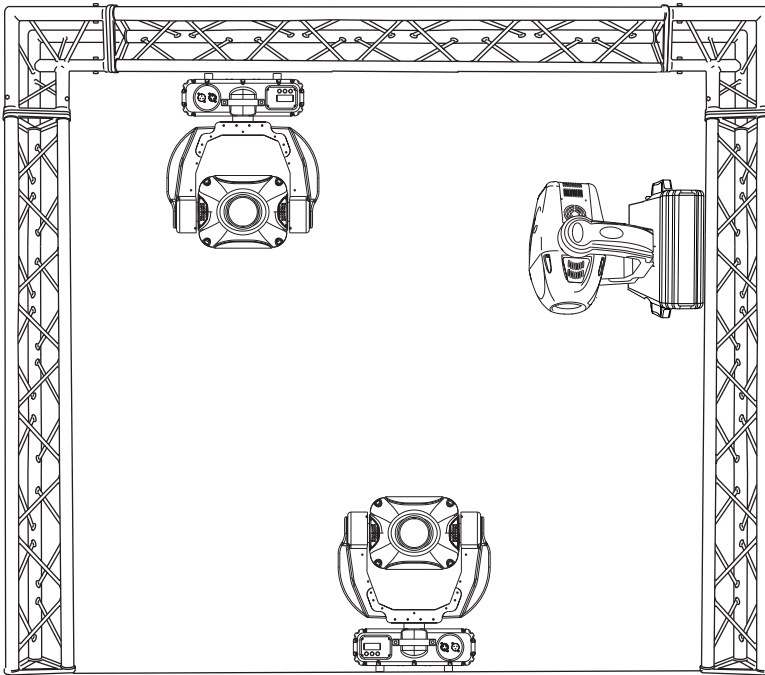
When installing the device, make sure there is no highly-inflammable material (decoration articles, etc.) within a distance of min. 0.5 m.



### **CAUTION!**

Use 2 appropriate clamps to rig the fixture on the truss.  
Follow the instructions mentioned at the bottom of the base.  
Make sure that the device is fixed properly! Ensure that the structure (truss) to which you are attaching the fixtures is secure.





The Moving-Head can be placed directly on the stage floor or rigged in any orientation on a truss without altering its operation characteristics (see the drawing).

The fixture's base enables to be mounted in two ways.

For overhead use (mounting height >100 cm), always install a safety-rope that can hold at least 12 times the weight of the fixture. You must only use safety-ropes with quick links with screw cap. Pull the safety-rope through the hole on the bottom of the base and over the trussing system etc. Insert the end in the quick link and tighten the fixation screw.

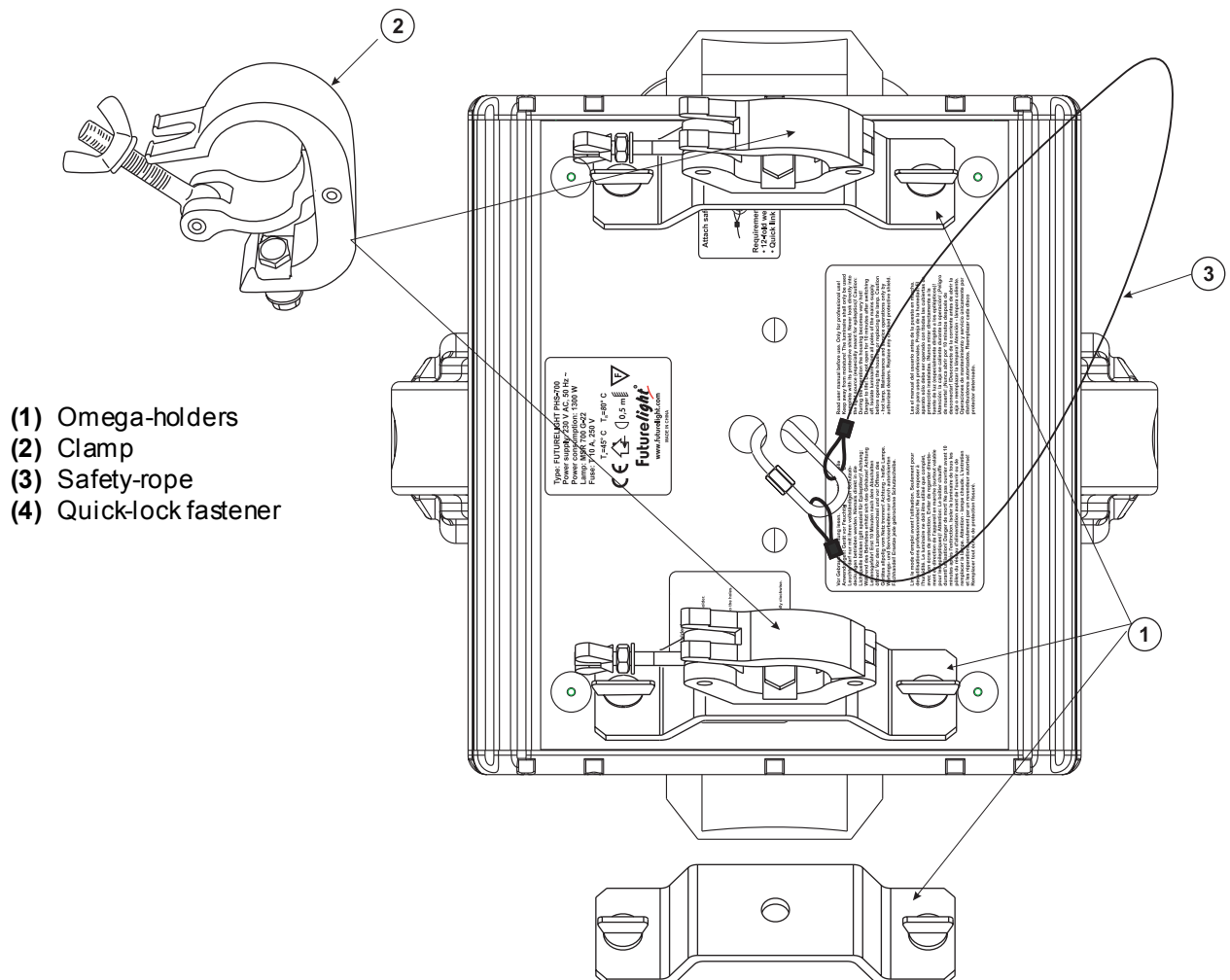
The maximum drop distance must never exceed 20 cm.

A safety rope which already hold the strain of a crash or which is defective must not be used again.



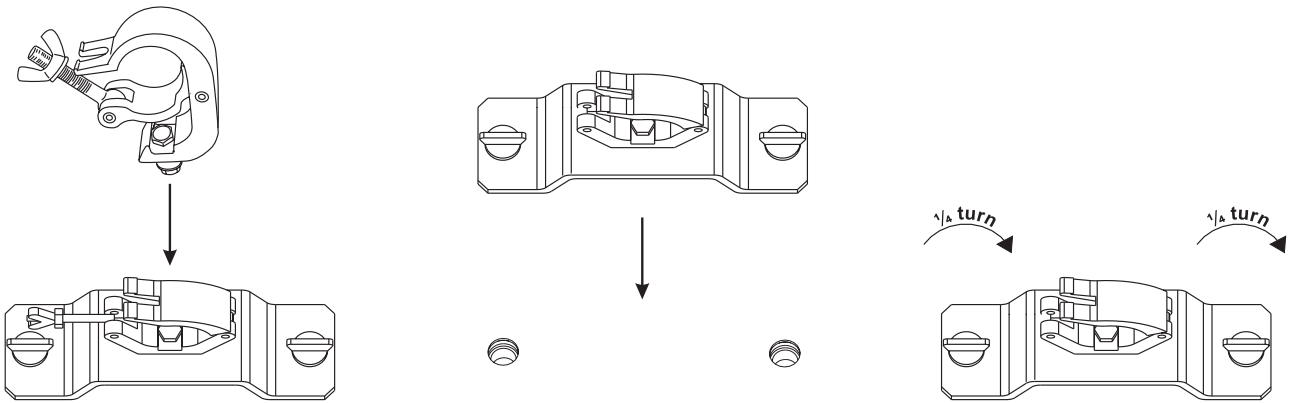
# **DANGER TO LIFE!**

Before taking into operation for the first time, the installation has to be approved by an expert!



- (1) Omega-holders
- (2) Clamp
- (3) Safety-rope
- (4) Quick-lock fastener

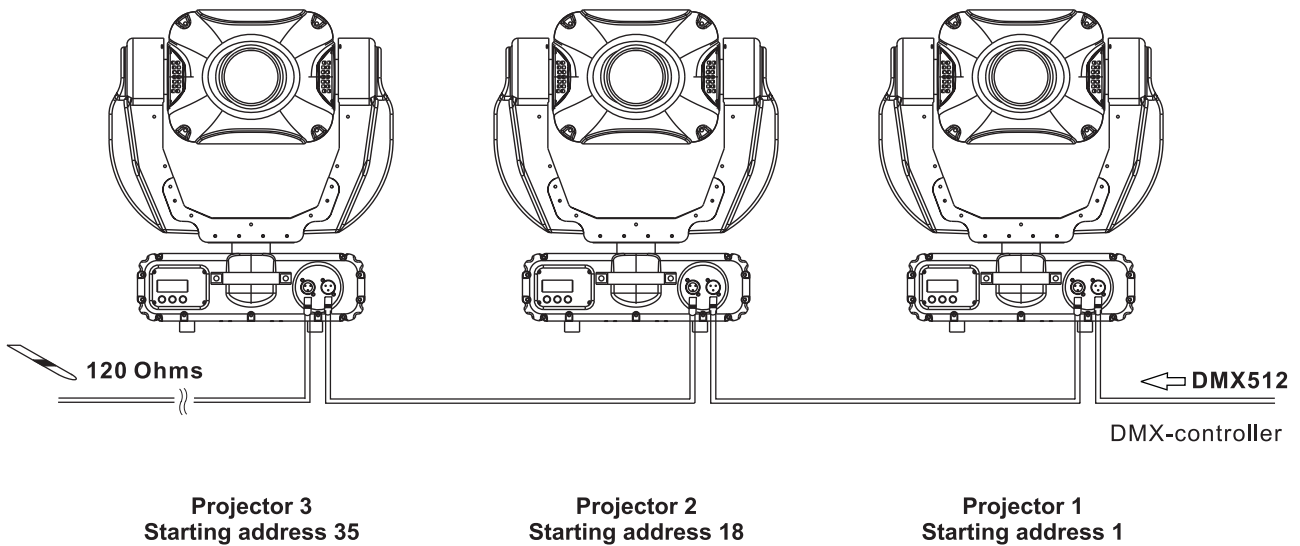
## English



Screw one damp each via a M12 screw and nut onto the Omega-holders.

Insert the quick-lock fasteners of the first Omega-holder into the respective holes on the bottom of the device. Tighten the quick-lock fasteners fully dockwise. Install the second Omega-holder.

### DMX-512 connection / connection between fixtures



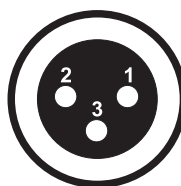
The wires must not come into contact with each other, otherwise the fixtures will not work at all, or will not work properly.



Only use a stereo shielded cable and 3-pin XLR-plugs and connectors in order to connect the controller with the fixture or one fixture with another.

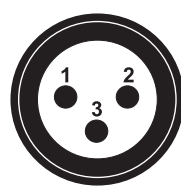
#### Occupation of the XLR-connection:

**DMX-output**  
XLR mounting-socket:



1: Ground  
2: Signal (-)  
3: Signal (+)

**DMX-input**  
XLR mounting-plug:



1: Ground  
2: Signal (-)  
3: Signal (+)

If you are using controllers with this occupation, you can connect the DMX-output of the controller directly with the DMX-input of the first fixture in the DMX-chain. If you wish to connect DMX-controllers with other XLR-outputs, you need to use adapter-cables.

**Building a serial DMX-chain:**


Connect the DMX-output of the first fixture in the DMX-chain with the DMX-input of the next fixture. Always connect one output with the input of the next fixture until all fixtures are connected.

**Caution:** At the last fixture, the DMX-cable has to be terminated with a terminator. Solder a 120  $\Omega$  resistor between Signal (–) and Signal (+) into a 3-pin XLR-plug and plug it in the DMX-output of the last fixture.

**Connection with the mains**

Connect the device to the mains with the enclosed power supply cable.

**The occupation of the connection-cables is as follows:**

Cable	Pin	International
Brown	Live	L
Blue	Neutral	N
Yellow/Green	Earth	

The earth has to be connected!

If the device will be directly connected with the local power supply network, a disconnection switch with a minimum opening of 3 mm at every pole has to be included in the permanent electrical installation.

Lighting effects must not be connected to dimming-packs.

**OPERATION**

After you connected the effect to the mains, the PHS-700 starts running. During the Reset, the motors are trimmed and the device is ready for use afterwards.

**Stand Alone operation**

In the Stand Alone mode, the PHS-700 can be used without controller. Disconnect the PHS-700 from the controller and call the internal program.

1. Press **[ENTER]** for 3 seconds to enter the main menu **"MODE"** (display flashing)
2. Press **[ENTER]** and select **"RUN"** by pressing **[UP]** button.
3. Press **[ENTER]** and select **"AUTO"** by pressing **[UP]** button.
4. Press **[ENTER]** and select **"ALONE"** by pressing **[UP]** button.
5. Press **[ENTER]** to confirm, the display shows **"AU-A"**.
6. Press **[EXIT/DN]** in order to return to the main menu.

Please refer to the instructions under Control Board, Main functions, menus Run and Edit.

**DMX-controlled operation**

You can control the projectors individually via your DMX-controller. Every DMX-channel has a different occupation with different features. The individual channels and their features are listed under DMX-protocol.

**Addressing**

The Control Board allows you to assign the DMX starting address, which is defined as the first channel from which the PHS-700 will respond to the controller.

If you set, for example, the address to channel 18, the PHS-700 will use the channel 18 to 34 for control.

Please, be sure that you don't have any overlapping channels in order to control each PHS-700 correctly and independently from any other fixture on the DMX-chain.

If several PHS-700 are addressed similarly, they will work synchronically.

Press the Up/Down-buttons for setting the desired starting address. Now you can start operating the PHS-700 via your lighting controller.

**Note:**

The modes of DMX 512 data and lamp are shown via the display:



1. After switching on, the device will automatically detect whether DMX 512 data is received or not. If the data is received, the the display will show "**A.001**" with the actually set address. If there is no data received at the DMX-input, the display will flash "**A001**" with the actually set address.

This situation can occur if:

- the 3 PIN XLR plug (cable with DMX signal from controller) is not connected with the input of the device.
- the controller is switched off or defective, if the cable or connector is defective or the signal wires are swap in the input connector.

**Note:**

It's necessary to insert the XLR termination plug (with 120 Ohm) in the last lighting in the link in order to ensure proper transmission on the DMX data link.

2. If the lamp is on, the the display will show "**A00.1**" with the actually set address. If the lamp is off, the the display will show "**A001**" with the actually set address.

**DMX-protocol****Control channel 1 - Horizontal movement (Pan) (within 630°)**

Push slider up in order to move the head horizontally (PAN).

Gradual head adjustment from one end of the slider to the other (0-255, 128-center). The head can be stopped at any position you wish.

**Control channel 2 - Vertical movement (Tilt) (within 265°)**

Push slider up in order to move the head vertically (TILT).

Gradual head adjustment from one end of the slider to the other (0-255, 128-center). The head can be stopped at any position you wish.

**Control channel 3 - Pan/Tilt-speed**

DMX-value	Feature
0-14	Maximum speed
15-225	Decreasing speed
226-235	Blackout with Pan/Tilt-movement
236-245	Blackout with colour/gobo-change
246-255	No function

**Control channel 4 - Colour-wheel 1**

DMX-value	Feature
0-15	Open / white
16-31	Light blue
32-47	Salmon pink
48-63	Blue
64-79	Yellow green
80-95	Light yellow
96-111	Magenta
112-127	Orange
128-187	Forwards rainbow effect with decreasing speed
188-193	No rotation
194-255	Backwards rainbow effect with increasing speed

**Control channel 5 - Colour-wheel 2**

DMX-value	Feature
0-15	Open / white
16-31	Red
32-47	Light blue
48-63	Pink
64-79	Yellow
80-95	Correction-filter 3,200 K
96-111	Correction-filter 5,600 K
112-127	UV-filter
128-187	Forwards rainbow effect with decreasing speed
188-193	No rotation
194-255	Backwards rainbow effect with increasing speed

**Control channel 6 - Rotating gobo-wheel 1, gobo shake**

DMX-value	Feature
0-9	Open
10-19	Rot. gobo 1
20-29	Rot. gobo 2
30-39	Rot. gobo 3
40-49	Rot. gobo 4
50-59	Rot. gobo 5
60-69	Rot. gobo 6
70-89	Gobo 1 shake with increasing speed
90-109	Gobo 2 shake with increasing speed
110-129	Gobo 3 shake with increasing speed
130-149	Gobo 4 shake with increasing speed
150-169	Gobo 5 shake with increasing speed
170-189	Gobo 6 shake with increasing speed
190-255	Cont. gobo-wheel rotation with increasing speed

**Control channel 7 - Rotating gobo index, gobo rotation**

DMX-value	Feature
0-127	Gobo indexing
128-187	Forwards gobo rotation with decreasing speed
188-193	No rotation
194-255	Backwards gobo rotation with increasing speed

**Control channel 8 - Rotating gobo-wheel 2, gobo shake**

DMX-value	Feature
0-9	Open
10-19	Rot. gobo 1
20-29	Rot. gobo 2
30-39	Rot. gobo 3
40-49	Rot. gobo 4
50-59	Rot. gobo 5
60-69	Rot. gobo 6
70-89	Gobo 1 shake with increasing speed
90-109	Gobo 2 shake with increasing speed
110-129	Gobo 3 shake with increasing speed
130-149	Gobo 4 shake with increasing speed
150-169	Gobo 5 shake with increasing speed
170-189	Gobo 6 shake with increasing speed
190-255	Cont. gobo-wheel rotation with increasing speed

**Control channel 9 - Rotating gobo index, gobo rotation**

DMX-value	Feature
0-127	Gobo indexing
128-187	Forwards gobo rotation with decreasing speed
188-193	No rotation
194-255	Backwards gobo rotation with increasing speed

**Control channel 10 - Rotating 3-facet-prism, macros**

DMX-value	Feature
0-3	Open
4-63	Forwards rotation with decreasing speed
64-67	No rotation
68-127	Backwards rotation with increasing speed
128-135	Macro 1
136-143	Macro 2
144-151	Macro 3
152-159	Macro 4
160-167	Macro 5
168-175	Macro 6
176-183	Macro 7
184-191	Macro 8
192-199	Macro 9
200-207	Macro 10
208-215	Macro 11
216-223	Macro 12
224-231	Macro 13
232-239	Macro 14
240-247	Macro 15
248-255	Macro 16

**Control channel 11 - Focus**

DMX-value	Feature
0 - 255	Continuous adjustment from near to far

**Control channel 12 – Iris**

DMX-value	Feature
0-191	Max. diameter to Min. diameter
192-223	Pulse closing with decreasing speed
224-255	Pulse opening with increasing speed

**Control channel 13 - Shutter, strobe**

DMX-value	Feature
0-31	Shutter dosed
32-63	Dimmer control activated (channel 14)
64-95	Strobe-effect with increasing speed (max. 13 flashes/sec.)
96-127	No function (shutter open)
128-159	Pulse-effect in sequences
160-191	No function (shutter open)
192-223	Random strobe-effect with increasing speed
224-255	No function (shutter open)

**Control channel 14 - Dimmer intensity**

This channel is only active if channel 13 is set to 32-63.  
You can invert the dimmer via the RDIM function.

DMX-value	Feature
0-255	Gradual adjustment of the dimmer intensity from 100 to 0 %

**Control channel 15 - Switching the lamp, Reset, internal programs**

DMX-value	Feature
0-15	Normal colour-change, search position via shortest distance
16-31	Normal colour-change, search position clockwise
32-47	Colour-change at every position, search position via shortest distance
48-63	Colour-change at every position, search position clockwise
64-79	Lamp on
80-95	Reset
96-111	Internal program 1
112-127	Internal program 2
128-143	Internal program 3
144-159	Internal program 4
160-175	Internal program 5
176-191	Internal program 6
192-207	Internal program 7
208-223	Internal program 8
224-239	Lamp off
240-255	No function

**Control channel 16 - Pan-movement with 16 Bit-resolution****Control channel 17 - Tilt-movement with 16 Bit-resolution**

## Control Board

The Control Board offers several features: you can simply set the starting address, switch on and off the lamp, run the pre-programmed program or make a reset.

The main menu is accessed by pressing the Enter-button for 3 seconds until the display starts flashing. Browse through the menu by pressing the Up-button. Press the Enter-button in order to select the desired menu. You can change the selection by pressing the Up-button. Confirm every selection by pressing the Enter-button. You can leave every mode by pressing the Exit-button. The functions provided are described in the following sections.

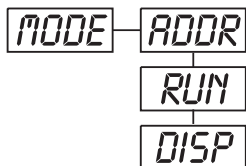
Default settings shaded.

	Main menu	Sub menu	Extension	Display	Function
0	MODE	ADDR	VALU	A001~A511 (AXX)	DMX address setting
			SLAV	ON/OFF (SLAV)	Slave setting
			EBOC	ON/OFF	Change DMX address via external controller
		RUN	AUTO	ALON (AU-A)	Automatic Program Run in Stand Alone
				MAST (AU-M)	Automatic Program Run as Master
			SOUN	ALON (SO-A)	Sound-controlled Program Run in Stand Alone
				MAST (SO-M)	Sound-controlled Program Run as Master
		DISP	VALU	D-00 ~ D-30 (DXX) D-00	Display the DMX 512 value of each channel
			RDIS	ON/OFF	Reverse display
			CLDI	ON/OFF	Shut off LED display
1	LAMP	OPEN	ON/OFF		Lamp on/off
		ONLI	ON/OFF		Lamp on/off via controller
		DELA	D-00 ~ D-59, D-15		Delay lamp on
2	SET	RPAN	ON/OFF		Pan Reverse
		RTIL	ON/OFF		Tilt Reverse
		RDIM	ON/OFF		Dimmer Reverse
		16BI	ON/OFF		Switch 16 bit/8 bit
		REST	ON/OFF		Reset
		LODA	ON/OFF		Restore factory settings
		VER	V-1.0~V-9.9		Software version
3	ADJU	LADJ	ON/OFF		Lamp adjustment
		TEST	T-01 ~ T-30		Test function of each channel
4	TIME	MATI	0000~9999 (hours)		Fixture running time
		LATI	0000~9999 (hours)		Lamp running time
		CLMT	ON/OFF		Service-function
		CLLT	ON/OFF		Clear lamp time
5	EDIT	STEP	S-01 ~ S-48		Steps of Program Run
		SC01 ~ SC48	C01 ~ C30	01XX (00~FF) 30XX (00~FF)	Edit the channels of each scene
			TIME (sec.)	I - - X (1~9)	Time for each scene
			CNIN	ON/OFF	Edit program via controller

## Main functions

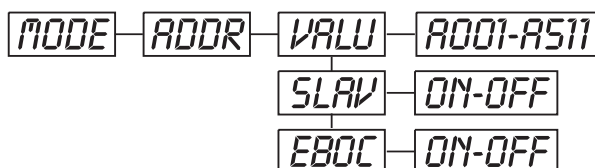


### MODE - Main menu 0



- ◆ Press **[ENTER]** for 3 seconds to enter the main menu "MODE" (display flashing)
- ◆ Press **[ENTER]** and select "ADDR", "RUN" or "DISP" by pressing **[UP]** button.
- ◆ Press **[ENTER]** for selecting the desired sub menu.

### ADDR - DMX address setting, Slave setting



#### VALU - DMX address setting

With this function, you can adjust the desired DMX-address via the Control Board.

- ◆ Select "VALU" by pressing **[UP]** button.
- ◆ Press **[ENTER]**, adjust the DMX address by pressing **[UP]** or **[DN]**.
- ◆ Press **[ENTER]** to confirm.
- ◆ Press **[EXIT/DN]** in order return to main menu.

#### SLAV - Slave setting

With this function, you can define the device as slave.

- ◆ Select "SLAV" by pressing **[UP]** button.
- ◆ Press **[ENTER]**, the display shows "ON" or "OFF".
- ◆ Press **[UP]** to select "ON" if you wish to enable this function or "OFF" if you don't.
- ◆ Press **[ENTER]** to confirm.
- ◆ Press **[EXIT/DN]** in order to return to the main menu.

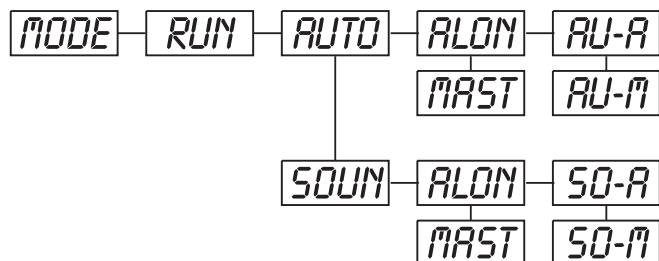
#### EBOC - DMX address setting via controller

With this function, you can adjust the desired DMX-address via an external controller.

- ◆ Select "EBOC" by pressing **[UP]** button.
- ◆ Press **[ENTER]**, the display shows "ON" or "OFF".
- ◆ Press **[UP]** to select "ON" if you wish to enable this function or "OFF" if you don't.
- ◆ Press **[ENTER]** to confirm.
- ◆ Press **[EXIT/DN]** in order to return to the main menu.
- ◆ On the controller, set the DMX-value of channel 1 to "7".
- ◆ Set the DMX-value of channel 2 to "7" or "8". When set to "7" you can adjust the starting address between 1 and 255. When set to "8" you can adjust the starting address between 256 and 511.
- ◆ Set the DMX-value of channel 3 to the desired starting address. If you want to set the starting address to 57, set channel 1 to "7", channel 2 to "7" and channel 3 to "57". If you want to set the starting address to 420, set channel 1 to "7", channel 2 to "8" and channel 3 to "164" (256+164=420).
- ◆ Wait for approx. 20 seconds and the unit will carry out a reset. After that, the new starting address is set.

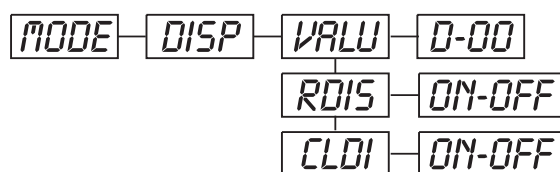
### RUN - Program Run, Master setting

With the function "RUN", you can run the internal program. You can set the number of steps under Step. You can edit the individual scenes under Edit. You can run the individual scenes either automatically (AUTO), i.e. with the adjusted Step-Time or sound-controlled (SOUN). The selection "ALON" means Stand Alone-mode and "MAST" that the device is defined as master.



- ◆ Select "AUTO" or "SOUN" by pressing [UP].
- ◆ Press [ENTER] for selecting the desired extension menu.
- ◆ Select "ALON" or "MAST" by pressing [UP].
- ◆ Press [ENTER] to confirm.
- ◆ Press [EXIT/DN] in order to return to the main menu.

**DISP** - Display the DMX-v alue, Reverse display, Shut off LED display



#### **VALU** - Display the DMX 512 v alue of each channel

With this function you can display the DMX 512 value of each channel.

- ◆ Select "VALU" by pressing [UP].
- ◆ Press [ENTER] to confirm; the display shows "D-00". In this setting, the DMX-adjustment of every channel will be displayed.
- ◆ Press [UP] in order to select the desired channel. If you select "D-14" the display will only show the DMX-value of the 14<sup>th</sup> channel.
- ◆ Press [ENTER] to confirm.
- ◆ The display shows "D-XX", "X" stands for the DMX-value of the selected channel.
- ◆ Press [ENTER] or [EXIT/DN] to exit.

#### **RDIS** - Reverse display

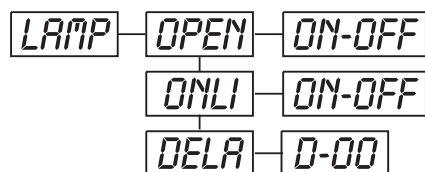
With this function you can rotate the display by 180°.

- ◆ Select "rDIS" by pressing [UP].
- ◆ Press [ENTER], the display shows "ON" or "OFF".
- ◆ Press [UP] to select "ON" if you wish to enable this function or "OFF" if you don't; the display will rotate by 180°.
- ◆ Press [ENTER] or [EXIT/DN] to exit.

#### **CLDI** - Shut off LED display

With this function you can shut off the LED display after 2 minutes.

- ◆ Select "CLDI" by pressing [UP].
- ◆ Press [ENTER], the display shows "ON" or "OFF".
- ◆ Press [UP] to select "ON" if you wish to enable this function or "OFF" if you don't.
- ◆ Press [ENTER] or [EXIT/DN] to exit.

**LAMP** - Main menu 1

- ◆ Press **[ENTER]** for 3 seconds to enter the main menu (display flashing).
- ◆ Press **[UP]** to select "**LAMP**".

**OPEN** - Lamp on/off

With this function you can switch the lamp on or off via the Control Board.

- ◆ Select "**OPEN**" by pressing **[UP]** button.
- ◆ Press **[ENTER]**, the display shows "**ON**" or "**OFF**".
- ◆ Press **[UP]** to select "**ON**" if you wish to switch on the lamp or "**OFF**" if you wish to switch off the lamp.
- ◆ Press **[ENTER]** to confirm.
- ◆ Press **[EXIT/DN]** in order to return to the main menu.

**ONLI** - Lamp on/off via external controller

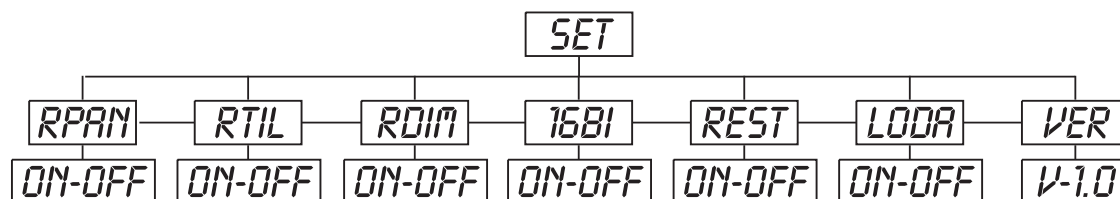
With this function you can switch the lamp on or off via an external controller.

- ◆ Select "**ONLI**" by pressing **[UP]** button.
- ◆ Press **[ENTER]**, the display shows "**ON**" or "**OFF**".
- ◆ Press **[UP]** to select "**ON**" if you wish to enable this function or "**OFF**" if you don't.
- ◆ Press **[ENTER]** to confirm.
- ◆ Press **[EXIT/DN]** in order to return to the main menu.

**DELA** - Delay lamp on

With this function you can delay the lamp ignition.

- ◆ Select "**DELA**" by pressing **[UP]** button.
- ◆ Press **[ENTER]** to confirm; the display shows "**D-00**". In this setting, the lamp will be ignited immediately.
- ◆ Press **[UP]** to select the desired delay between "**00**" and "**59**" minutes. If you select "**D-03**" the lamp will be ignited after 3 minutes.
- ◆ Press **[ENTER]** to confirm.
- ◆ Press **[EXIT/DN]** in order to return to the main menu.

**SET** - Main menu 2

- ◆ Press **[ENTER]** for 3 seconds to enter the main menu (display flashing).
- ◆ Press **[UP]** to select "**SET**".

**RPAN** - Pan Reverse

With this function you can reverse the Pan-movement.

- ◆ Select "**rPAN**" by pressing **[UP]** button.
- ◆ Press **[ENTER]**, the display shows "**ON**" or "**OFF**".
- ◆ Press **[UP]** to select "**ON**" if you wish to enable this function or "**OFF**" if you don't.
- ◆ Press **[ENTER]** or.

**RTIL** - Tilt Reverse

With this function you can reverse the Tilt-movement.

- ◆ Select "**rTIL**" by pressing **[UP]** button.

- ◆ Press **[ENTER]**, the display shows “ON” or “OFF”.
- ◆ Press **[UP]** to select “ON” if you wish to enable this function or “OFF” if you don’t.
- ◆ Press **[ENTER]** or **[EXIT/DN]** to exit.

### ***RDIM*** - Dimmer Reverse

With this function you can reverse the Dimmer from 100-0 % to 0-100 %.

- ◆ Select “RDIM” by pressing **[UP]** button.
- ◆ Press **[ENTER]**, the display shows “ON” or “OFF”.
- ◆ Press **[UP]** to select “ON” if you wish to enable this function or “OFF” if you don’t.
- ◆ Press **[ENTER]** or **[EXIT/DN]** to exit.

### ***16BI*** - Switch 16 bit/8 bit

With this function you can switch the device from 16 bit to 8 bit resolution.

- ◆ Select “16BI” by pressing **[UP]** button.
- ◆ Press **[ENTER]**, the display shows “ON” or “OFF”.
- ◆ Press **[UP]** to select “ON” in order to set 16 bit, or “OFF” in order to set 8 bit. The channels PAN Fine and TILT Fine will be disabled.
- ◆ Press **[ENTER]** or **[EXIT/DN]** to exit.

### ***REST*** - Reset

With this function you can Reset the device via the Control Board.

- ◆ Select “rEST” by pressing **[UP]** button.
- ◆ Press **[ENTER]**, the display shows “ON” or “OFF”.
- ◆ Press **[UP]** to select “ON” if you wish to enable this function or “OFF” if you don’t.
- ◆ Press **[ENTER]** or **[EXIT/DN]** to exit.

### ***LODA*** - Restore factory settings

With this function you can restore the factory settings of the device. All settings will be set back to the default values (shaded). Any edited scenes will be lost.

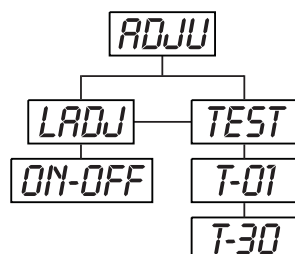
- ◆ Select “LODA” by pressing **[UP]** button.
- ◆ Press **[ENTER]**, the display shows “ON” or “OFF”.
- ◆ Press **[UP]** to select “ON” if you wish to enable this function or “OFF” if you don’t.
- ◆ Press **[ENTER]** to confirm.
- ◆ Press **[EXIT/DN]** in order to return to the main menu.

### ***VER*** - Software version

With this function you can display the software version of the device.

- ◆ Select “VER” by pressing **[UP]** button.
- ◆ Press **[ENTER]**, the display shows “V-X.X”, “X.X” stands for the version number, e.g. “V-1.0”, “V-2.6”.
- ◆ Press **[ENTER]** or **[EXIT/DN]** in order to return to the main menu.

## ***ADJU*** - Main menu 3



- ◆ Press **[ENTER]** for 3 seconds to enter the main menu (display flashing).
- ◆ Press **[UP]** to select “ADJU”.

### ***LADJ*** - Lamp adjustment

With this function you can adjust the lamp via the Control Board. The shutter opens and the lamp can be adjusted. In this mode, the device will not react to any control signal.

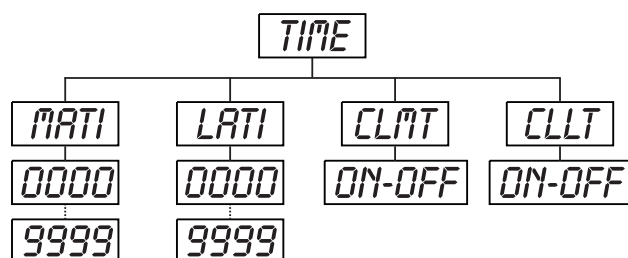
- ◆ Select “**LADJ**” by pressing **[UP]** button.
- ◆ Press **[ENTER]**, the display shows “**ON**” or “**OFF**”.
- ◆ Press **[UP]** to select “**ON**” if you wish to enable this function or “**OFF**” if you don’t.
- ◆ Press **[ENTER]** to confirm.
- ◆ Press **[EXIT/DN]** in order to return to the main menu.

### **TEST** - Test function of each channel

With this function you can test each channel on its (correct) function.

- ◆ Select “**TEST**” by pressing **[UP]** button.
- ◆ Press **[ENTER]**, the display shows “**T-XX**”, “X” stands for the channel number.
- ◆ The current channel will be tested.
- ◆ Select the desired channel by pressing **[UP]** button.
- ◆ Press **[ENTER]** or **[EXIT/DN]** to exit.

### **TIME** - Main menu 4



- ◆ Press **[ENTER]** for 3 seconds to enter the main menu (display flashing).
- ◆ Press **[UP]** to select “**TIME**”.

#### **MATI** - Fixture running time

With this function you can display the running time of the device.

- ◆ Select “**MATI**” by pressing **[UP]** button.
- ◆ Press **[ENTER]**, the display shows “**XXXX**”, “X” stands for the number of hours.
- ◆ Press **[ENTER]** or **[EXIT/DN]** to exit.

#### **LATI** - Lamp running time

With this function you can display the running time of the lamp.

- ◆ Select “**LATI**” by pressing **[UP]** button.
- ◆ Press **[ENTER]**, the display shows “**XXXX**”, “X” stands for the number of hours.
- ◆ Press **[ENTER]** or **[EXIT/DN]** to exit.

#### **CLLT** - Clear lamp time

◆ With this function you can clear the running time of the lamp. Please clear the lamp time every time you replace the lamp.

- ◆ Select “**CLLT**” by pressing **[UP]** button.
- ◆ Press **[ENTER]**, the display shows “**ON**” or “**OFF**”.
- ◆ Press **[UP]** to select “**ON**” if you wish to enable this function or “**OFF**” if you don’t.
- ◆ Press **[ENTER]** to confirm.
- ◆ Press **[EXIT/DN]** in order to return to the main menu.

### **EDIT** - Main menu 5

- ◆ Press **[ENTER]** for 3 seconds to enter the main menu (display flashing).
- ◆ Press **[UP]** to select “**EDIT**”.

#### **STEP** - Define the number of steps in Run

With this function you can define the number of steps in the Program Run.

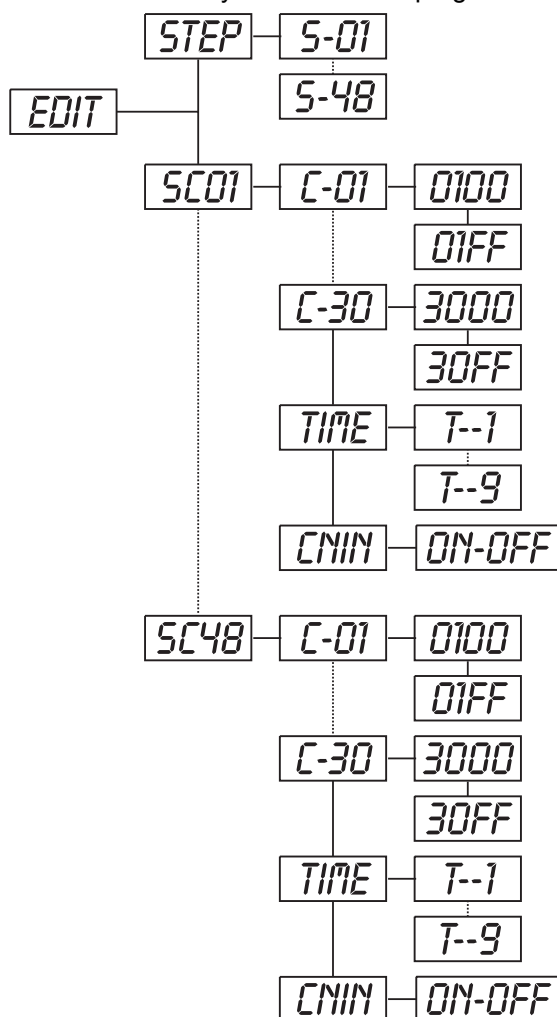
- ◆ Select “**STEP**” by pressing **[UP]** button.

◆ Press **[ENTER]**, the display shows "S-XX", "X" stands for the total amount of steps you want to save, so you can call up to 48 scenes in "RUN". For example if the "XX" is 05, it means that "RUN" will run the first 5 scenes you saved in "EDIT".

◆ Press **[ENTER]** to save and exit.

### SC01 - Editing the channels of the individual scenes

With this function you can edit the program to be called up in Run.



#### a) Editing via the Control Board

◆ Select "SC01" by pressing **[UP]** button.

◆ Press **[ENTER]**, the display shows "SCXX", "X" stands for the scene no. to be edited.

◆ Change the scene no. by pressing **[UP]**.

◆ Press **[ENTER]**, the display shows "C-XX", "XX" stands for the channel no. Such as "C-01", it means you are editing channel 1 of the selected scene.

◆ Select the channel no. you would like to edit by pressing **[UP]**.

◆ Press **[ENTER]** to enter editing for the selected channel, the fixture reads to your settings. The display shows the DMX value of the edited channel. Such as "11XX", it stands for channel 11 of the current scene, the DMX value is XX, XX is a hexadecimal number value "01-FF".

◆ Adjust the desired DMX value by pressing **[UP]** or **[DN]**.

◆ Press **[ENTER]** in order to edit other channels of this scene.

◆ Repeat above steps until you finish setting all the DMX values for all channels of this scene.

◆ Once all the channels completed, the display will flash "time".

◆ Press **[ENTER]** to edit the time needed, the display shows "t-X", "X" stands for the time needed to run the current scene, value "1-9". For example, "t-2" means you need 2 seconds to run the current scene.

◆ Adjust the desired time by pressing **[UP]**.

◆ Press **[ENTER]** to save the settings for the scene you are editing, the display will change to the next scene automatically.

◆ Repeat above steps to edit and other scenes, you can edit and save a maximum of 48 scenes.

◆ Press **[EXIT/DN]** to exit. The number of steps can be defined under "STEP" and the scenes can be called up under "RUN"

#### b) Editing via the external controller

◆ Call up the first scene in your controller now.

◆ Select "SC01" by pressing **[UP]** button.

◆ Press **[ENTER]**, the display shows "SC01".

◆ Press **[ENTER]**, the display shows "C-01".

◆ Select "CNIN" by pressing **[UP]**.

◆ Press **[ENTER]**, the display shows "OFF".

◆ Press **[UP]**, the display shows "ON".

◆ Press **[ENTER]**, the display shows "SC02". You successfully downloaded the first scene.

◆ Adjust the Step-time as described above.

◆ Call up the second scene in your controller now.

◆ Repeat steps 5-11 until all desired scenes are downloaded.

◆ Press **[EXIT/DN]** to exit. The number of steps can be defined under "STEP" and the scenes can be called up under "RUN"

## Error Messages

When you turn on the fixture, it will make a reset first. The display may show “XXEr” while there are problems with one or more channels. “XX” stands for the channels equipped with a testing sensor. For example, when the display shows “04Er”, it means there is some error in channel 4. If there are some errors on channel 1, channel 2, channel 4 at the same time, you may see the error message “01Er”, “02Er”, “4Err” flash repeatedly for 5 times, and then the fixture will generate a reset signal, all the stepper motors will reset. If the error messages maintain after performing reset more than 3 times, it will detect whether the fixture has more than 3 errors. If the fixture has more than 3 errors (including 3 errors), all the channels can not work properly; but if the fixture has less than 3 errors, only the channels which have errors can not work properly, others can work as usual.

### 01Er:

(PAN-yoke movement error) This message will appear after the reset of the fixture if the yoke's magnetic-indexing circuit malfunction (sensor failed or magnet missing) or the stepping-motor is defective (or its driving IC on the main PCB). The yoke is not located in the default position after the reset.

### 02Er:

(TILT-head movement error) This message will appear after the reset of the fixture if the head's magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepping-motor is defective (or its driving IC on the main PCB). The head is not located in the default position after the reset.

### 04Er:

(Color-wheel error 1) This message will appear after the reset of the fixture if the magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepping-motor is defective (or its drive circuit on the main PCB). The color wheel is not located in the default position after the reset.

### 05Er:

(Color-wheel error 2) This message will appear after the reset of the fixture if the magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepping-motor is defective (or its drive circuit on the main PCB). The color wheel is not located in the default position after the reset.

### 06Er:

(Rotating gobo-wheel error 1) This message will appear after the reset of the fixture if the magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepping-motor is defective (or its drive circuit on the main PCB). The rotating gobo-wheel is not located in the default position after the reset.

### 07Er:

(Rotating gobo indexing error 1) This message will appear after the reset of the fixture and if the magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepping-motor is defective (or its driver circuit on the main PCB). The rotating gobo is not located in the default position after the reset.

### 08Er:

(Rotating gobo-wheel error 2) This message will appear after the reset of the fixture if the magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepping-motor is defective (or its drive circuit on the main PCB). The rotating gobo-wheel is not located in the default position after the reset.

### 09Er:

(Rotating gobo indexing error 2) This message will appear after the reset of the fixture and if the magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepping-motor is defective (or its driver circuit on the main PCB). The rotating gobo is not located in the default position after the reset.

### 10Er:

(Prism-wheel error) This message will appear after the reset of the fixture and if the magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepping-motor is defective (or its driver circuit on the main PCB). The prism-wheel is not located in the default position after the reset.

### 10Er:

(Iris error) This message will appear after the reset of the fixture and if the magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepping-motor is defective (or its driver circuit on the main PCB). The iris is not located in the default position after the reset.

## CLEANING AND MAINTENANCE

The operator has to make sure that safety-relating and machine-technical installations are inspected by an expert after every four years in the course of an acceptance test.

The operator has to make sure that safety-relating and machine-technical installations are inspected by a skilled person once a year.

The following points have to be considered during the inspection:

- 1) All screws used for installing the devices or parts of the device have to be tightly connected and must not be corroded.
- 2) There must not be any deformations on housings, fixations and installation spots (ceiling, suspension, trussing).
- 3) Mechanically moved parts like axles, eyes and others must not show any traces of wearing (e.g. material abrading or damages) and must not rotate with unbalances.
- 4) The electric power supply cables must not show any damages, material fatigue (e.g. porous cables) or sediments. Further instructions depending on the installation spot and usage have to be adhered by a skilled installer and any safety problems have to be removed.



### **DANGER TO LIFE!**

**Disconnect from mains before starting maintenance operation!**

We recommend a frequent cleaning of the device. Please use a moist, lint-free cloth. Never use alcohol or solvents!



### **CAUTION!**

**The lens has to be replaced when it is obviously damaged, so that its function is impaired, e. g. due to cracks or deep scratches!**

The objective lens will require weekly cleaning as smoke-fluid tends to building up residues, reducing the light-output very quickly. The cooling-fans should be cleaned monthly.

The gobos may be cleaned with a soft brush. The interior of the fixture should be cleaned at least annually using a vacuum-cleaner or an air-jet.

The dichroic colour-filters, the gobo-wheel and the internal lenses should be cleaned monthly.

To ensure a proper function of the gobo-wheel, we recommend lubrication in six month intervals. The quantity of oil must not be excessive in order to avoid that oil runs out when the gobo-wheel rotates.

There are no serviceable parts inside the device except for the lamp and the fuse. Maintenance and service operations are only to be carried out by authorized dealers.

Please refer to the instructions under "Installing/Replacing the lamp".

## **Replacing the fuse**

If the lamp burns out, the fine-wire fuse of the device might fuse, too. Only replace the fuse by a fuse of same type and rating.

**Before replacing the fuse, unplug mains lead.**

### **Procedure:**

- Step 1:** Unscrew the fuseholder on the rearpanel with a fitting screwdriver from the housing (anti-clockwise).
- Step 2:** Remove the old fuse from the fuseholder.
- Step 3:** Install the new fuse in the fuseholder.
- Step 4:** Replace the fuseholder in the housing and fix it.

Should you need any spare parts, please use genuine parts.

If the power supply cable of this device becomes damaged, it has to be replaced by a special power supply cable available at your dealer.

Should you have further questions, please contact your dealer.

## TECHNICAL SPECIFICATIONS

Power supply:	230 V AC, 50 Hz ~
Power consumption:	1,300 W
DMX-control-channels:	17
DMX-512-connection:	3-pin XLR
Flash-rate:	13 Hz
Colour-wheel 1:	7 dichroic + white
Colour-wheel 2:	4 dichroic, 2 correction filters, UV-filter + white
Rotating gobo-wheel 1:	6 gobos and open
Rotating gobo-wheel 2:	6 gobos and open
Outside diameter of the gobos:	27 mm
Image diameter of the gobos:	23 mm
Maximum PAN-movement 630°:	in 3.5 s
Maximum TILT-movement 265°:	in 2.5 s
Length of base (including handles):	530 mm
Width of yoke:	390 mm
Height (head horizontal):	570 mm
Weight (net):	37 kg
Maximum ambient temperature $t_a$ :	45° C
Maximum housing temperature $t_b$ (steady state):	80° C
Min.distance from flammable surfaces:	0.5 m
Min.distance to lighted object:	0.5 m
Fuse:	T 10 A, 250 V
<b>Fitting lamp:</b>	
PHILIPS MSR700 72V/700W G-22	No. 89105015
PHILIPS MSR700/2 72V/700W G-22	No. 89105016
<b>Recommended controllers:</b>	
FUTURELIGHT CP-528 Controller 16bit	No. 51834315
Wizard-512 USB DMX-Software + Interface	No. 51860102
Wizard-1024 DMX-Software + Interface	No. 51860110

**Please note: Every information is subject to change without prior notice. 06.08.2003 ©**